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Research paper

The digital marketing capabilities gap

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ABSTRACT

Over the past two decades, digitalization has revolutionized not only consumer marketing but also industrial marketing. Both industrial marketing scholars and industrial marketers seek insights to understand how our knowledge and practice of digital marketing has been structured and configured. To address this gap, we adopt the resource-based perspective as an organizing framework and systematically review 129 articles spanning two decades of research to identify different digital marketing capabilities in industrial firms. From this analysis, we identify four themes: channels, social media, digital relationships, and digital technologies. We then stress-test this knowledge with managerial practices by conducting an online survey of 169 managers, designed to establish the repertoire of current and future marketing capability needs of industrial firms. Herein, we identify two marketing capabilities gaps: *the practice gap*—which identifies the deficit between managers' 'current' practices and their 'ideal' digital marketing capabilities; and, *the knowledge gap*—which demonstrates a significant divide between the digital marketing transformations in industrial firms and the extant scholarly knowledge that underpins this. Based on these results, we build an agenda for future research on digital marketing capabilities.

1. Introduction

Over the past two decades, digitalization has revolutionized not only consumer marketing but also industrial marketing. E-Commerce, mobile devices, smart products, the Internet of Things (IoT), and Artificial Intelligence all fall within the broader concept of *digital marketing* which includes all activities, institutions, and processes facilitated by digital technologies for creating, communicating, and delivering value for customers (American Marketing Association, 2013). The growing importance of digital marketing in the industrial context is underscored in several recent B2B marketing trends (e.g., Gupta, 2018; Janda, 2018; O'Neill, 2018). For example, industrial marketers intensify their content marketing, employ more often marketing automation platforms, increasingly use chatbots for customer interactions, and search for new prospects on social media sites. Against these developments, our paper seeks to advance the understanding of how digitalization has shaped and will reformulate marketing in industrial firms.

While some researchers have already offered literature reviews of digital, social media, and mobile marketing (e.g., Kannan & Li, 2017; Lamberton & Stephen, 2016; Yadav & Pavlou, 2014), all these studies

exhibit three shortcomings that prevent them to fully inform the industrial marketing field. First, these literature reviews have an implicit business to consumer focus, largely neglecting the specific context of industrial firms. Notable exceptions are reviews that focus on subtopics within industrial marketing such as social media use of industrial firms (Salo, 2017) or the impact of digitalization on salespeople (Singh et al., 2019). Second, most attention has been given to the tremendous opportunities digital marketing presents, with little attention on the actual related competences that firms need to be successful. We believe that resource-based theory has the potential to bridge this gap and to guide industrial managers on how to benefit from digitalization. Viewing industrial firms as a bundle of capabilities (Barney, 1991) helps to identify, build, and sustain sources of competitive advantage in the new normal of our digital era. Third, existing literature reviews focus on published research only, thereby neglecting the accelerating emergent of “new” digital capabilities in managerial practice. This is troublesome, especially given the speed at which digital technologies evolve and impact business opportunities.

We address these gaps by reviewing 129 high-quality articles that investigate digital marketing capabilities and related resources, by

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confronting 169 managers with the results of the literature review, and by building a future research agenda for the industrial marketing field. Our objectives for this paper are three-fold. First, we address the “*what do we know of digital marketing capabilities*” question of prior research and develop a framework for industrial marketing research which highlights how the literature on digital capabilities and resources has evolved over the past two decades. Second, we pose the question of “*which digital marketing capabilities will drive future value*” and respond by creating insights from a management survey. Finally, we consider “*how can the digital marketing capabilities gap be reconciled*” by revealing several shortcomings of extant research that have hitherto constrained its relevance and created points of disconnect between academia and practice; thereby informing our agenda for interesting, relevant, and forward-looking digital marketing research for industrial firms.

2. Conceptual development

Resource-based theory offers a valuable framework to investigate digital business strategies and their consequential competitive advantages (Bharadwaj, El Sawy, Pavlou, & Venkatraman, 2013). More generally, resource-based theory explains the development of a firm's competitive advantage based on capabilities (or competences), defined as a set of “skills and resources which enable the company to achieve superior performance” (Harmsen & Jensen, 2004, p. 535) in a way that is difficult for competitors to imitate (Barney, 1991). Although the industrial marketing literature has often employed the resource-based approach as an important theoretical platform (e.g., Morgan, Miočević, & Herhausen, 2019), it is surprisingly scarce in digital marketing research.

In line with Guesalaga, Gabrielsson, Rogers, Ryals, and Cuevas (2018), we distinguish *resources* from *capabilities* to analyze digital marketing in industrial firms. Helfat and Peteraf (2003, p. 999) describe a resource as “an asset or input to production (tangible or intangible) that an organization owns, controls, or has access to on a semi-permanent basis,” and a capability as “the ability of an organization to perform a coordinated set of tasks, utilizing organizational resources, for the purpose of achieving a particular end result.” The distinction of resources and capabilities offers an appropriate lens for studying digital marketing because its success depends on the management of assets (e.g., a large data set) and the ability to undertake specific tasks and processes (e.g., machine learning to uncover meaningful insights). Consequently, we define a *digital marketing resource* as a digital-related marketing asset (tangible or intangible) that a B2B firm owns, controls, or has access to on a semi-permanent basis. Moreover, a *digital marketing capability* is the ability of a B2B firm to perform a coordinated set of digital-related tasks (operational or dynamic), utilizing digital resources, for achieving a competitive advantage.

Importantly, in the digital context, resources often fail to meet the theoretical requirements to be classified as a resource namely being inimitable, rare, valuable, and non-substitutable (Lambrecht & Tucker, 2015). For example, data that are available due to user-generated content reflecting digital behavior across the Internet can be scraped with low costs from many sites, and other sites sell their user data or allow firms to take advantage of user data through targeted advertisement. Consequently, such data are neither inimitable nor rare, and due to its access by competitors not necessarily valuable. Given multiple providers of data and access (e.g., Google versus Facebook), such data are neither non-substitutable. Indeed, the unstable history of digital business with examples such as Yahoo or Netscape offers little evidence that the mere possession of digital resources is sufficient for value creation and a competitive advantage. The focus of a digital marketing strategy should therefore be on *how to use digital resources as inputs which, in turn, create capabilities from which value and competitive advantage can be derived*. Consequently, we mainly focus in our review on digital marketing capabilities because these endow firms with the means to adapt to market changes that stem from digitalization, new

technologies, and changing consumer behavior (Day, 2011). We thus complement existing reviews¹ by focusing on digital marketing capabilities for industrial firms by asking: (1) what do we know of digital marketing capabilities; (2) which digital marketing capabilities will drive future value; and, (3) how can the digital marketing capabilities gap be reconciled.

3. Literature review

3.1. Identifying relevant articles

We conducted a systematic literature review to explore the capabilities that underpin digital marketing in industrial firms. Our goal was to identify and classify all critical digital marketing capabilities (and resources). Consistent with other systematic reviews, we limit our review to high-quality sources that align with the study context. To this end, all sources needed to explicitly fall within the scope of marketing and to ensure that all articles included met a threshold of quality as determined by journal centrality and academic standing. We thus considered the following nine journals for the literature review: *Industrial Marketing Management*; *International Journal of Research in Marketing*; *Journal of Business Research*; *Journal of Interactive Marketing*; *Journal of Marketing Research*; *Journal of Marketing*; *Journal of Personal Selling & Sales Management*; and *Journal of the Academy of Marketing Science*. In line with other reviews of digital marketing (e.g., Kannan & Li, 2017; Lamberton & Stephen, 2016), we considered all articles published after 2000 until the time of this review (i.e., mid-2019).² A total of 129 articles qualified for extraction and synthesis, with the majority of articles being attributable to *Industrial Marketing Management* (99 articles, 77% of all articles).

3.2. Classifying digital marketing capabilities

All digital marketing capabilities and resources in each of the 129 articles were classified according to their broader topic. Thus, we coded each article's constructs of interest into a set of common topics for the purposes of our analysis. The authors resolved any differences of the coding scheme through iteration and discussion. We identified 147 appearances of specific digital marketing capabilities or resources for industrial firms. Several topics of domain-specific capabilities were condensed and revised. For example, capabilities such as “use of social networking sites,” “social media messaging,” and “social media knowledge” were classified as “social media capabilities.” These efforts resulted in seven first-order topics that we subsequently distilled to four second-order themes. Table 1 presents the research topics and themes, the number of appearances per topic, and illustrative examples for capabilities and resources.

Given clear and apparent themes that emerged from the topics considered during the census period, we use four intervals to

¹ Yadav and Pavlou (2014) focus on marketing in computer-mediated environments and review literature in both marketing and information systems. The review by Lamberton and Stephen (2016) focuses on consumer psychology, motivations, and expressions in digital environments. The review by Kannan and Li (2017) focuses on the touchpoints in the marketing process where digital technologies are having and will have a significant impact.

² We conducted searches in citation databases for the respective journals (EBSCO, Science Direct, Emerald, and Web of Knowledge), using the following search terms in the abstract: (“Internet” OR “electronic” OR “online” OR “digital” OR “social media” OR “mobile”) AND (“industrial” OR “B2B” OR “business to business”). This initial keyword search resulted in a set of 225 articles published in the eight journals, which we then filtered based on their relevance. All papers not addressing capabilities or resources and all papers without an industrial marketing context were excluded. The authors resolved any differences through iteration and discussion, with reference to the full text of the articles under consideration.

Table 1
Literature review on digital marketing capabilities for industrial firms.

Themes	Topics	Illustrative capabilities	Illustrative resources
Theme 1: Channels	Online Channel (49 appearances)	<ul style="list-style-type: none"> Internet use (Avlonitis & Karayanni, 2000) Participation in electronic markets (Grewal et al., 2001) E-readiness (Berthon, Pitt, Berthon, Campbell, & Thwaites, 2008) 	<ul style="list-style-type: none"> Website (Chakraborty, Lala, & Warren, 2002) Web-based portal (Clarke III & Flaherty, 2003) E-marketplace (Eng, 2004)
	Multichannel (13 appearances)	<ul style="list-style-type: none"> Channel integration (Long et al., 2007) Channel coordination (Osmonbekov et al., 2009) Multi-channel capability (Kabadayi et al., 2007) 	<ul style="list-style-type: none"> Hybrid sales structure (Thaichon et al., 2018)
	Mobile (3 appearances)	<ul style="list-style-type: none"> Mobile device usage (Müller et al., 2018) 	<ul style="list-style-type: none"> Mobile sales assistants (Spreer & Rauschnabel, 2016) Mobile app (Gill et al., 2017)
Theme 2: Social Media	Social Media (34 appearances)	<ul style="list-style-type: none"> Social media use (Agnihotri, Kothandaraman, Kashyap, & Singh, 2012) Social media messaging (Swani et al., 2014) Social media knowledge (Nguyen, Yu, Melewar, & Chen, 2015) 	<ul style="list-style-type: none"> Social CRM technologies (Trainor, 2012) Social media community (Wang, Hsiao, Yang, & Hajli, 2016) Positive customer reviews (Steward et al., 2018)
Theme 3: Digital Relationships	Interfirm Relationships (23 appearances)	<ul style="list-style-type: none"> Digital supply chain coordination (Garcia-Dastugue & Lambert, 2003) CRM process capabilities (Keramati, Mehrabi, & Mojir, 2010) Video conferencing usage (Hardwick & Anderson, 2019) 	<ul style="list-style-type: none"> Digital CRM (Keramati et al., 2010) CRM technology (Agnihotri et al., 2017)
	Employees (4 appearances)	<ul style="list-style-type: none"> Implementing technological change (Sarin et al., 2010) Technology capability (Lassk et al., 2012) Salesperson social media competency (Guesalaga, 2016) 	<ul style="list-style-type: none"> Digitalization for internal branding (Li et al., 2018)
Theme 4: Digital Technologies	Technologies (18 appearances)	<ul style="list-style-type: none"> IT capability (Grewal et al., 2001) Artificial intelligence and machine learning (Gordini & Veglio, 2017) Virtual reality usage (Boyd & Koles, 2019) 	<ul style="list-style-type: none"> Digital selling tools (Marshall et al., 2012) Internet of things technology (Suppatvech et al., 2019) Machine-to-machine communication (Leminen et al., 2019)

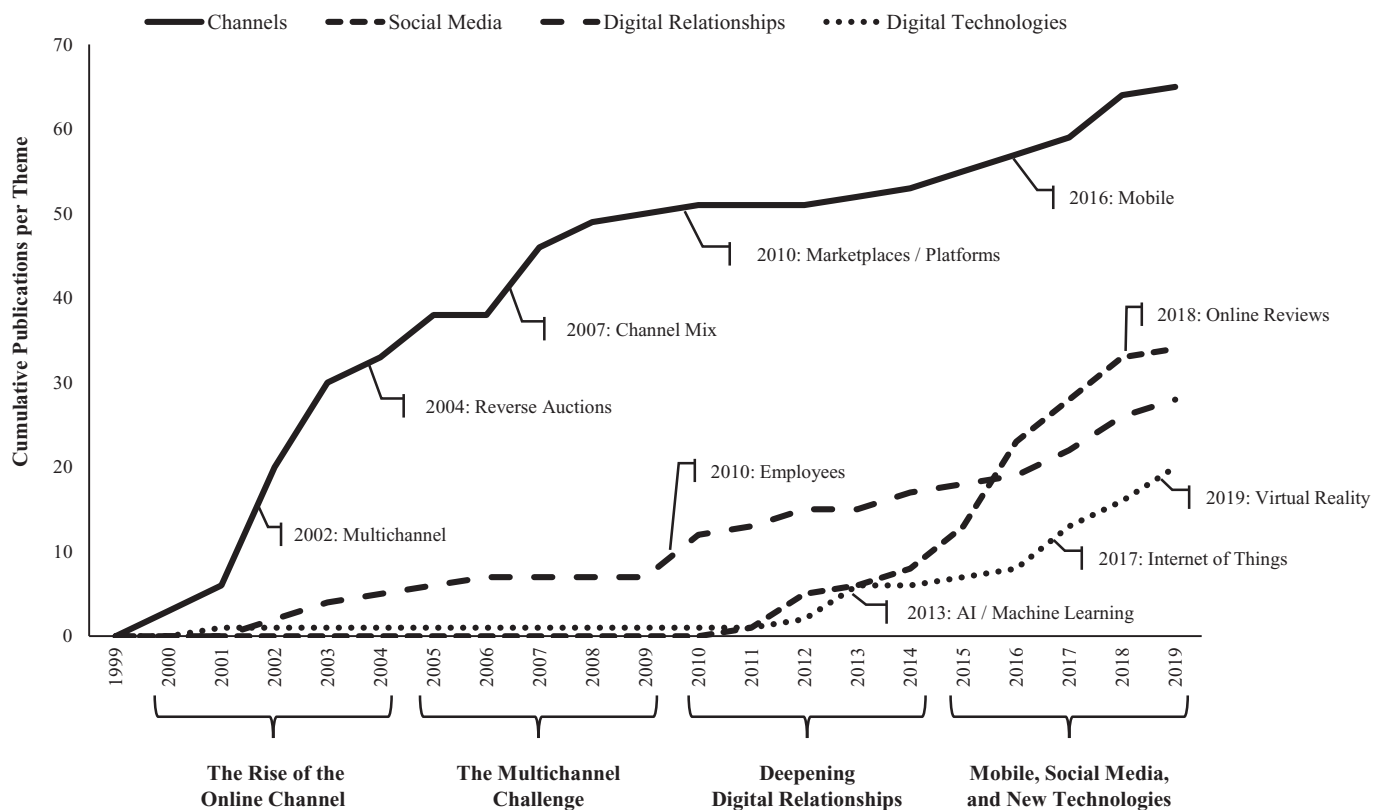


Fig. 1. Representation of the cumulative body of research on the four themes over time.

Note: Selected thematic inflection points are reported.

Table 2
Digital marketing capability second-order themes and first-order topics over time.

Research topics and derived themes	2000 to 2004: The rise of the online channel	2005 to 2009: The multichannel challenge	2010 to 2014: deepening digital relationships	2015 to 2019: Mobile, social media, and new technologies
Channels	33 (85%)	17 (90%)	3 (11%)	12 (19%)
Online Channel	30 (77%)	10 (53%)	3 (11%)	6 (9%)
Multichannel	3 (8%)	7 (37%)	–	3 (5%)
Mobile	–	–	–	3 (5%)
Social media	–	–	8 (31%)	26 (42%)
Digital relationships	5 (13%)	2 (10%)	10 (39%)	11 (17%)
Interfirm relationships	5 (13%)	2 (10%)	8 (31%)	9 (14%)
Employees	–	–	2 (8%)	2 (3%)
Digital technologies	1 (2%)	–	5 (19%)	14 (22%)
Total publications	39	19	26	63

characterize the shifting focus of industrial marketing research on digital marketing capabilities. In line with previous literature reviews (e.g., Guesalaga et al., 2018; Lamberton & Stephen, 2016), we divided our census period into different intervals (see Fig. 1 and Table 2). Studies published from 2000 to 2004 predominantly focus on the rise of the online channel, accounting for 77% of all digital capabilities considered during the census period. While many studies published from 2005 to 2009 still investigated the online channel, its interplay with other channels gained importance. Many publications shifted its focus to multichannel capacities, in particular to the coordination and integration of the online channel with other channels. During the years 2010–2014, deepening digital relationships was the main theme. This includes both interfirm relationships and intrafirm relationships to employees. Contemporary studies published from 2015 to 2019 are characterized with three dominant topics, namely mobile, social media, and digital technologies. Similar to the B2C domain, it is apparent that the total number of publications devoted to digital capabilities in industrial marketing has increased considerably in more recent years. Our literature review continues with an explication of the four digital marketing capability themes.

3.2.1. Channels

Most of the earlier research on digital capabilities falls under the first theme of channels—consisting of online channel (48 articles), multichannel (12 articles), and mobile capabilities (three articles)—defined as the customer contact points or the mediums through which the firm and the industrial customer interact. Out of the 63 articles, 26 are conceptual; 6 use qualitative methods; and 31 articles use quantitative methods. The intellectual legacy of channel capabilities is dominated by the conceptual/theoretical understanding how the Internet provides a new gateway for industrial buyer-seller exchanges through various types of emerging online channel capabilities and resources. The advent of the Internet inherently transformed the conception how B2B transactions were conducted (Sharma, 2002). For example, industrial marketing researchers examined how *Internet use* enhances firm level processes and performance (Avlonitis & Karayanni, 2000) and changes marketing activities such as managing sales (Long, Tellefsen, & Lichtenthal, 2007) and communications (Lichtenthal & Eliaz, 2003).

Scholars also discussed the plausibility of adding *web portals* as a new resource to B2B strategies (Clarke III & Flaherty, 2003). For example, Perry and Bodkin (2002) study reveals crucial determinants of how deep industrial firms engage in website marketing. In terms of managing the firm's own website as a channel, Deeter-Schmelz, Kennedy, and Goebel (2002) investigated how firms utilize the Internet as a communication tool in buying-selling dyads. Ellinger, Lynch, and Hansen (2003) demonstrate that industrial firms with higher investments in website interactivity witness higher sales revenues payoff. Besides for communication, scholars have found that industrial firms that use websites for expressing their corporate brands report higher financial performance (Simoes, Singh, & Perin, 2015). Most recently,

others have revealed the value of *corporate blogging* as an emerging capability for B2B professionals (Thakur & AlSaleh, 2018), potentially signaling more research on emerging communication capabilities.

The increasing diffusion of the Internet in the B2B sphere has enabled many industrial firms to establish their own online channels which resulted in disintermediation and the genesis of *e-commerce*. In an early phase, researchers started to investigate the motivation and abilities of industrial firms to participate in e-commerce as sellers (Grewal, Comer, & Mehta, 2001) and buyers (Kennedy & Deeter-Schmelz, 2001). As e-commerce started to gain momentum, researchers engaged in revealing the structural idiosyncrasies (Dou & Chou, 2002) and underlying marketing capabilities (Siu, 2002) of successful e-commerce adoption. Furthermore, studies show the importance of the IT infrastructure in determining e-commerce activities (Claycomb, Iyer, & Germain, 2005; Min & Galle, 2003).

As a new form of market making, authors discussed the (dis)advantages (Jap, 2002) as well as the cost saving potentials (Emiliani, 2004) of *online auctions and reverse auctions*. Online (reverse) auctions have been considered market making mechanism that disrupts traditional buyer-seller industrial relationships by putting the price in the spotlight as a critical cue in making buying decision (Emiliani, 2005). By furthering the principle of “cost savings”, authors warned that it is possible for online auctions to enhance long-term relationships between its constituents while simultaneously lowering the costs of transactions (Daly & Nath, 2005).

At the same time while entering the online domain, industrial firms continued to maintain their traditional channels. This led researchers to scrutinize how to successfully develop *multichannel capabilities* (Sharma & Mehrotra, 2007) while successfully integrating and optimizing all online and offline channels (Rosenbloom, 2007). B2B firms that extend to online channels face challenges of optimization in their general business strategy but witness higher financial performance (Cheng, Tsao, Tsai, and Tu, 2007; Kabadayi, Eyuboglu, & Thomas, 2007). In parallel, scholars made first attempts to unfold what drives the B2B buyer's decision to engage in multichannel purchasing (Merrilees & Fenech, 2007) as well as B2B sellers' view how they could exploit the B2B multichannel engagement (Müller, Pommeranz, Weisser, & Voigt, 2018).

With growing importance of the Internet, the phenomenon of re-intermediation emerged where new types of online intermediaries in the form of *electronic marketplaces* appeared, and industrial firms need to build capabilities to deal with them. As a new phenomenon, scholars sought to assess the incidence of electronic marketplaces employed by industrial firms (Fu, Chao, Chang, & Chang, 2008). Following on from this work, empirical evidence became a substantive means of understanding when e-marketplace makers should engage in specific governance mechanism with a goal of enhancing e-marketplace performance (Grewal, Chakravarty, & Saini, 2010). Most recently, scholars have investigated the evolution of two-sided online platforms, which simultaneously operate in both B2C and B2B streams (Muzellec, Ronteau, & Lambkin, 2015). By identifying that the supply side of two-

sided platforms is under-researched, these scholars contributed to better understanding the opportunities and challenges for businesses that offer products and services through such platforms (Lim, 2017). Concurrently, scholars found evidence that engagement in B2B online platforms creates early mover advantage benefits but only for short period (Deng & Wang, 2016).

A small number of studies have explored the potential *dark side* associated with B2B online exchanges. These report that conflicts may surface with the implementation of demand-side e-commerce solutions (Osmonbekov, Bello, & Gilliland, 2009). Since privacy may be violated, researchers have examined how to enhance trust in e-commerce settings (Luo, 2002). However, this work has been transcended given ubiquitous computing in B2B markets (e.g., with IoT technologies) and more recent investigations on data privacy in B2C settings (Martin, Borah, & Palmatier, 2017), industrial marketing research is needed that addresses this important topic.

As technology advanced, *mobile media* became an important channel for B2B firms. For example, Spreer and Rauschnabel (2016) identified six factors that inhibit the use of mobile devices in sales assistance. In addition, others have investigated the benefits of using *mobile apps* as a resource for customer engagement and found that such initiatives result in higher sales through empowering business customer to participate (Gill, Sridhar, & Grewal, 2017). Recent studies have started to shed light on the multichannel capabilities needed to integrate mobile and social media into a firm's existing marketing channels (Thaichon, Surachartkumtonkun, Quach, Weaven, & Palmatier, 2018).

3.2.2. Social media

A second theme, associated with 31 articles, focuses on digital capabilities that are specific to social media, which are defined as digital communication platforms and services that allow parties to connect with one another, to share information, and engage in dialogue. These include social networking sites, collaborative projects, blogs, content communities, and virtual worlds (Kaplan & Haenlein, 2010). Industrial marketing publications related to social media capabilities started to appear after 2010, and research on this topic was substantially stimulated by a special issue in the *Journal of Personal Selling & Sales Management* in 2012 and two special sections of *Industrial Marketing Management* in 2016 and 2019. Although a relatively young research stream, social media in the field of industrial marketing has already evoked an informative literature review (Salo, 2017). While that literature review sheds light on the opportunities of social media for industrial firms, it does not address social media-related capabilities and resources as we do. Out of the 31 articles identified for our review, four are conceptual, seven use qualitative methods, and 20 articles employ quantitative methods.

The preponderance of articles investigate the capability of industrial firms to use *social media* as a marketing tool and its related resources (26 articles), on either the employee or the organizational level. On the employee level (i.e., salespersons, 14 articles), studies have mostly identified the expected utility, usability, and usefulness as primary reasons for employees to use social media, and improved market knowledge and a higher communication quality as the direct outcomes of social media use. Illustrative of this stream of research is Itani, Agnihotri, and Dingus's (2017) study in which the authors examine attitude towards social media usefulness as an antecedent and competitive intelligence collection as well as adaptive selling behavior as outcomes of social media use. Other antecedents for employees' social media usage are individual proficiency and familiarity with social media tools as well as the organizational social media expertise (Guesalaga, 2016). All studies on the employee level report positive effects of social media use on relevant outcomes (e.g., Ogilvie, Agnihotri, Rapp, & Trainor, 2018; Rodriguez, Peterson, & Krishnan, 2012).

Research on the organizational level largely mirrors research on the employee level (12 articles). Perceived usefulness and ease of use

motivate B2B firms to adopt social media (Siamagka, Christodoulides, Michaelidou, & Valvi, 2015), and higher communication quality is an expected outcomes of social media use (Wang, Pauleen, & Zhang, 2016). Moreover, organizational social media use has been conceptually and qualitatively linked to co-creating value (Trainor, 2012), interfirm cooperation (Chirumalla, Oghazi, & Parida, 2018), and network creation (Quinton & Wilson, 2016). However, although all studies on the organizational level expect positive effects of social media use, no study so far has quantified a potential organizational performance effect for B2B firms. This might be the reason for an interesting paradox. Despite the high interest in social media for industrial firms in academia and practice (e.g., O'Neill, 2018), an early study found that a majority of B2B companies considered social media use as irrelevant for them (Michaelidou, Siamagka, & Christodoulides, 2011), and a more recent survey found little evidence that this has changed: B2B managers perceived social media as less important and less effective than other managers (Iankova, Davies, Archer-Brown, Marder, & Yau, 2019). Moreover, there is little research on the microfoundations of social media use, in other words the processes and routines that enable B2B firms to engage in social media conversations.

Four articles investigate the *content management* capabilities of industrial firms, all on the organizational level. These articles shed light on the distinct semantic approaches (Mehmet & Clarke, 2016), distinct functions (Leek, Canning, & Houghton, 2016), and distinct communication strategies (Swani, Brown, & Milne, 2014) that underpin social media messages for B2B firms. Moreover, investigating different communication strategies in business markets, Swani, Milne, Brown, Assaf, and Donthu (2017) found that the inclusion of the brand name, functional and emotional appeals, and information search cues increases the popularity of B2B messages. Research is silent on the topic of what guides salespeople in their individual content management strategies when they use social media relevant for customer relationships (in particular LinkedIn). Finally, one article considers *B2B online reviews* as an important resource for industrial firms (Steward, Narus, & Roehm, 2018). However, no further research is apparent on this valuable topic which lags the B2C context and for which there is no direct comparison (e.g., Bruhn, Schnebel, & Schäfer, 2014).

3.2.3. Digital relationships

The third theme is devoted to digital relationship capabilities which we define as the dynamic and ongoing interactions between trusted parties that are interdependent and enable value to be appropriated by any actor. Twenty seven articles are attributable to this theme from our review. The majority of these were quantitative studies from a range of research designs (16 articles) through to qualitative studies including content analyses as well as case methods and interviews (9 articles). Two of these articles reported conceptual insights from agenda setting reviews on supply chain coordination (Garcia-Dastugue & Lambert, 2003) and sales management training (Lassk, Ingram, Kraus, & Mascio, 2012) in B2B relationship building.

Digital marketing capabilities are largely derived from sources devoted to interfirm relationships as well as relationships with employees. These include digital supply chain management, managing virtual networks, collaboration marketplaces, governance mechanisms, and customer relationship management as capabilities related to interfirm relationships, and intra-firm relationship management, employee training, and the digital sales interface as employee capabilities. Although the majority of the articles considered relationships at the inter-organizational interface(s) as the unit of analysis (23 articles), 4 articles examined relationships at the individual employee level. Scholarly attention was originally devoted to firm capabilities in their *upstream digital relationships* with the purpose of improving buyer-supplier relations (Leek, Turnbull, & Naude, 2003), creating more timely communication (MacDonald & Smith, 2004), coordinating network performance (Gupta, Cadeaux, & Dubelaar, 2006; Gupta, Cadeaux, & Woodside, 2005), and ensuring improved supply chain coordination

(Garcia-Dastugue & Lambert, 2003). The early stages of B2B relationships are characteristically chaotic for both sides of the exchange (La Rocca, Perna, Caruana, & Snehota, 2016). Relationships build through interactions and, evidently, digital technologies have provided the means to improve search, selection, and communication with upstream partners thereby facilitating greater coordination. Initially, digital technologies enabled firms to create rudimentary capabilities for instrumental purposes designed primarily to improve information sharing within supply chains (Bharadwaj et al., 2013). As relationships consolidated between firms, our knowledge of the impact of firms' capabilities with digital marketing communications have been evaluated. Evidence indicates that personal relationships still drive interactivity, but the merits of digital relationships are that they are more favorable than impersonal communications because they allow rationality to be exhibited and reciprocal feedback to be created which are important drivers of relational satisfaction at scale (Murphy & Sashi, 2018).

The nature of this work coincided with the greater adoption of technology from upstream coordination to begin to span the value chain. Thus, *midstream digital relationships* came to the fore by examining virtual networks, collaboration marketplaces, and governance mechanisms for collaboration. Topics that emerged here included empirical works investigating e-market orientation (Shaltoni & West, 2010), central actors in platform relationships (Laczko, Hulova, Needham, Rossiter, & Battisti, 2019), and governance mechanisms in electronic markets (Grewal et al., 2010) as interfirm capabilities.

Of note here are the lateral and network relationships that Pagani and Pardo (2017) identify. Their work revealed that digital marketing capabilities enable three forms of related parallel effects being: (1) activities-linked centered digitalization leading to the optimization and coordination of existing activities; (2) resource-ties centered digitalization leading to the combinations of new resources which, in turn, generate new activities; and, (3) actor-bonds centered digitalization leading to new bonds among actors not previously linked (p. 191). Furthermore, Wang, Potter, Naim, and Beevo (2011) investigated collaborative (as opposed to closed) electronic logistics marketplaces, which have evolved significantly since this time, and were among the first to analyze how such a system can be configured through the marketing integrations capabilities of information processing and collaborative structures.

Downstream digital relationships provide the greatest number of articles in the digital relationships literature because fundamentally, “one of the most important tasks in marketing is to create and communicate value to customers to drive their satisfaction, loyalty, and profitability” (Kumar & Reinartz, 2016, p. 36). Moreover, particular challenges and opportunities exist for delivering customer value using digital relationships in the B2B setting. In this regard, B2B relationships go deeper—B2B journeys are longer and more complex and typically involve many individuals; customization is widespread leading to greater coordination demands; and, the stakes tends to be very high in B2B digital relationships (Maechler, Poenaru, von Collenberg, & Schulze, 2017).

These downstream articles are generally more recent and provide a consolidation and synthesis of many of the previous burgeoning literature streams. The preponderance of topics reflect the ‘outside-in’ perspective in B2B marketing and are devoted to sales-based digital capabilities. These included: return on engagement activities within B2B relationships (Guesalaga, 2016); customer relationship management in post-sales service (Agnihotri, Trainor, Itani, & Rodriguez, 2017); as well as digital sales resources deployed to identify franchisees (López-Fernández & Perrigot, 2018). Sales-based studies are complemented by intra-firm digital relationships such as the work by Li, Guo, Cao, and Li (2018) on internal branding, as well as the higher-order exploitation of resources deployed to deliver innovation (Hardwick & Anderson, 2019; Zahay, Hajli, & Sihi, 2018) and advanced coordination, collaboration, and integration capabilities between firms and platforms (Laczko et al., 2019; Mallapragada, Grewal, Mehta, &

Dharwadkar, 2015). It is clear that the diffusion of the mature digital relationship adoption practices in B2C markets are diffusing to B2B markets, albeit at a slower rate. For example, Gill et al. (2017) investigate a mobile app that a tool manufacturer provides for free to engage its buyers and find that the app increased annual sales revenues by up to 23%. They identify, importantly, that the form and nature of organizational buyer participation intensity is the critical mechanism to deliver these returns.

Regarding employee digital marketing capabilities, scholars have primarily considered individual competency of their roles fulfilling organizational routines. These efforts have explored the extent to which greater investments in sales training (Sarin, Sego, Kohli, & Challagalla, 2010) and understanding how technological capabilities could support the sales environment (Marshall, Moncrief, Rudd, & Lee, 2012). Furthermore, Lassk et al. (2012) explain how training influences a salesperson's ability to manage technological change in the firm's sales strategy. Specifically, they find program formality is important to trigger training effectiveness provided the training is mandatory. Some resistance to digital marketing capabilities in sales was evident among older salespeople but overall when engaged, the training effectiveness delivers a series of behavioral- and outcome-based performance indicators.

3.2.4. Digital technologies

The fourth research theme consists of 18 articles focusing on digital technologies. Eight of these articles are conceptual; four use qualitative methods; and six articles use quantitative methods. At the start of the century with electronic markets still being relatively novel, Grewal et al. (2001) focused on basic *IT capabilities* and discussed the importance of the industrial firm's IT capabilities in order to be able to participate in such markets and to deal with the dynamic environment that often characterizes the digital world. As with any introduction of new technology, it is important that firms are ready to embrace such technologies (Vize, Coughlan, Kennedy, & Ellis-Chadwick, 2013). At that time, some firms were evidently more *technology ready* than others, which impacts the way they are able to capitalize on these new opportunities.

Later publications reflected the development and increasing progress of electronic commerce, becoming later known as digital, technologies. Kuruzovich (2013) finds that *sales technology resources* are important for lead sales management in online channels. Such IT systems are designed specifically for sales processes and allow for more effective information management by the sales force. Sales organizations have been transitioning from traditional, outside sales forces, i.e., field sales, to structures that facilitate online sales management (Thaichon et al., 2018). The accompanying Internet technologies have taken fundamental data management software to intelligent, digitized selling, providing the resources needed for customer-centric relationship management. Järvinen and Taiminen (2016) concur that marketing automation plays an important role in increasing high-quality sales leads and the quality of such resources can substantially impact customer satisfaction and loyalty (Kingshott, Sharma, & Nair, 2020).

Automation can significantly contribute to the generation of content that is personalized and thus more relevant to the target audience, increasing chances of conversion. Moreover, in order to fully exploit the potential of digital marketing, it is important that industrial firms are able to assess how such activities impact performance. This calls for an alignment between the firm strategy and the metrics selected; a strong knowledge base and skills to utilize web analytics; and an organization structure that embeds a marketing metrics system as a resource (Järvinen & Karjaluo, 2015).

Social communication technologies extend sales technologies to another level. While both theory and practice seem to be vastly skewed towards B2C applications, B2B practice is reorienting itself towards this new way of acquisition, lead generation, and relationship management (Janda, 2018). The use of social communication technology in B2B is

not new, but they have often been considered secondary to more traditional means of communication. Yet, the technologies underpinning social media offer new ways to connect firms, i.e., sales managers and their customers (Marshall et al., 2012). Social media can transform both the sales structures and processes (Moncrief, 2017) and extend the way relationships can be facilitated as their reach can be larger. As Coreynen, Matthyssens, and Van Bockhaven (2017) point out, digital technologies are an essential resource to support this transition, where different resource configurations can offer distinctly different advantages that range from industrial, commercial, and value-based propositions.

While social media enables human interaction via a technological interface, recent developments in IoT technology presents new configurations including machine-to-machine interactions (Leminen, Rajahonka, Wendelin, & Westerlund, 2019). IoT resources and capabilities allow for new, modular configurations, where components that can interact with each other independent of human intervention, which are likely to radically transform interactions between people, as well as people and objects (Sousa & Rocha, 2019). IoT technology can provide a supporting backbone in B2B communications where information can be exchanged between objects that deliver input for example for maintenance and support (Falkenreck & Wagner, 2017).

When designed well, this can create smart ecosystems for customized solutions, which is often essential in B2B settings and helps manufacturing companies in their transition of moving from sales to services. For example, Suppatvech, Godsell, and Day (2019) develop four archetypes of IoT-enabled servitized business models, where IoT is used as a resource to create additional functions such as personalized services or to connect customers and assets in smart ways (e.g., location-based services). While there are plentiful examples of IoT solutions in B2C by now (Ng & Wakenshaw, 2017), B2B firms are recognizing this potential as well. This is likely to lead to new business opportunities but also new risks, as loci of control are likely to shift (Sousa & Rocha, 2019). IoT also can be used as a resource for facilitating new servitized models that are user-based (Suppatvech et al., 2019) and thus particularly interesting for any type of subscription-based payment. Recently, Philips Lighting collaborated with Deloitte to create an IoT based system for one of the Deloitte offices, where Deloitte no longer buys lights, but a lighting solution that is owned and maintained by Philips, challenging the company to offer the most sustainable solution. Finally, in the solution-oriented business model IoT allows firms to offer integrated solutions specifically tailored to the customer's needs. In B2B this typically translates to maintenance and support as well as optimization solutions, where IoT can create unique configurations to more effectively build such solutions to support B2B firms in their core activities and processes. Key to the success of IoT technologies the perceived credibility and usefulness of such technologies by B2B channel partners (Falkenreck & Wagner, 2017).

Artificial intelligence presents firms yet again with a technology that can significantly impact sales, both in the offline and online environment (Moncrief, 2017, Sousa & Rocha, 2019). Within that, big data has also led to new technologies and techniques to analyze new types of data, such as image, text or speech in different ways than before (Sousa & Rocha, 2019). By means of machine learning techniques, big data and predictive analysis that take future forward approach, firms are able to improve for example activities along the sales funnel, such as targeting and positioning (Syam & Sharma, 2018) but also customer churn management and eCRM (Gordini & Veglio, 2017). While AI is typically recognized as an essential element in B2B production and manufacturing, the emergence of robotics in customer-facing activities cannot be ignored (Martínez-López & Casillas, 2013). Today, robots start to work along-side humans, and at times even independently in various points of the value chain, including the front office (Sousa & Rocha, 2019). Ultimately, these technologies are indicative of a shift in decision making from humans to machines (Syam & Sharma, 2018).

Finally, while the concept of virtual reality emerged already a few

decades ago, only in recent years the true business potential of *virtual reality technology* for industrial firms has been recognized. Academic research has only begun to investigate the impact of virtual reality usage can reshape B2B firms and their market performance (Boyd & Koles, 2019). Virtual reality literally takes IT capabilities from 2D to 3D, with recent breakthroughs in this field offering a new level of realism to this technology. VR has shifted from a technical to an experiential focus, where “VR applications capture three-dimensional, computer-generated spaces that enable vivid and multi-sensory experiences within rich media settings” (Boyd & Koles, 2019).

4. Management interviews and survey

4.1. Data collection

A two-phase data collection process captured the managerial view on the current development and future importance of the digital marketing capabilities. Phase 1 was aimed at evaluating and where needed refining, adjusting, and completing the list of capabilities and technologies derived from the literature review. This round consisted of a roundtable discussion of the first author with 17 managers during a university workshop. Participants all worked in marketing, sales, or key account manager roles and operated in various industries, including manufacturing, IT and technology, and professional services. Confronted with the four themes and an initial list of digital marketing capabilities and technologies based on the literature review, the managers renamed some of the capabilities and technologies (e.g., platform

Table 3

Profile analysis of participants in the management survey.

	Full Sample	B2B Respondents	B2C Respondents
Country			
Switzerland	67	48%	25%
Germany	15	10%	6%
Austria	12	4%	7%
Croatia	10	3%	4%
United Kingdom	8	10%	8%
Other	57	25%	54%
Industry			
IT and Technology	23	19%	5%
Fast-Moving Consumer Goods	19	9%	16%
Retailing	13	5%	13%
Optics, Medicine, and Measurement	11	8%	5%
Financial Services	10	6%	6%
Manufacturing	10	9%	2%
Service Provider	10	9%	2%
Other	73	35%	51%
Position			
General Management	67	48%	25%
Marketing	64	27%	49%
Sales	27	20%	10%
Product Development	6	5%	2%
Other	5	0%	14%
Yearly turnover			
up to 1 million Euro	31	20%	16%
1 million to 5 million Euro	13	9%	6%
5 million to 20 million Euro	15	11%	5%
20 million to 50 million Euro	12	9%	3%
50 million to 100 million Euro	19	14%	6%
more than 100 million Euro	63	37%	38%
No response	16	0%	25%
Organizational Size (Employees)	9736	10,802	7312
Organizational Age	59.69	56.80	66.62
Tenure in Years	8.70	9.19	7.57
Age in Years	43.48	43.69	43.00
Gender (Female)	26%	28%	22%

Note: N_{B2B} = 106 managers, N_{B2C} = 63 managers.

Table 4
Most important digital marketing capabilities.

Most Important Capabilities for B2B Firms			Most Important Capabilities for B2C Firms		
1.	Own company website	75%	1.	Own company website	56%
2.	Multichannel capability	48%	2.	Multichannel capability	48%
3.	Social CRM technologies	45%	3.	Social media for organizational communication	30%
4.	Social media for organizational communication	43%		Providing a mobile app for customers	30%
5.	Digital selling tools	31%	4.	Social CRM technologies	24%
6.	Digital CRM technologies	30%	5.	Implementing digital change	22%
	Taking advantage of positive customer reviews	30%	6.	Digital CRM technologies	21%
7.	Implementing digital change	26%		Reacting appropriately on negative customer reviews	21%
	Engaging in digital business communities	26%		Use of third party e-commerce for selling	21%
8.	Reacting appropriately on negative customer reviews	25%		Digital selling tools	21%
	Use of third party e-commerce for selling	25%	7.	Own social media community	19%
9.	Advanced data analytics	25%		Advanced data analytics	19%
10.	Providing a mobile app for customers	23%	8.	Taking advantage of positive customer reviews	17%
	Salesperson social media competency	23%		Use of company-sponsored blogs as communication channel	17%
			9.	Use of mobile sales assistants	14%
				Big data visualization	14%
			10.	Salesperson social media competency	13%

Note: N_{B2B} = 106 managers, N_{B2C} = 63 managers. All participants could select as many digital marketing capabilities that are most important to them as they want (participants selected 1 to 19 digital marketing capabilities).

instead of E-marketplace), grouped some of the capabilities and technologies (e.g., channel integration and channel coordination into multichannel capability), excluded capabilities and technologies that they deemed irrelevant in 2019 (e.g., E-readiness), and added new capabilities and technologies (e.g., scraping and web crawling). The first author then reviewed the revised list of the digital marketing capabilities, resolved any disagreements among participants in a group discussion, and consolidated all suggested changes.

Phase 2 aimed to contrast the view of B2B and B2C managers on their digital marketing capabilities and technologies because previous research has found meaningful differences in how consumer and industrial firms approach digital topics (Iankova et al., 2019). We used an online survey in which participants considered the *current situation* in their firm and rated how well each digital capability or technology is developed within their firm (1 = not at all developed / 7 = fully developed), as well as the *future importance* of each digital capability or technology over the next five years (1 = further development is not important at all / 7 = further development is of utmost importance). Additionally, they selected what they believed to be the *most important digital capabilities* or technologies for their marketing from a drop-down list (participants were provided with the opportunity to choose as many capabilities or technologies as they wished). We also asked all participants whether any important digital marketing capabilities or technologies were missing in the list and they were provided with an open option to enter this.

A link to the questionnaire was distributed to managers via LinkedIn on the authors' profiles and via email among B2B and B2C managers from an alumni panel of the first author's university. A total of 169 managers fully completed the questionnaire (106 B2B and 63 B2C managers). Table 3 contains the summary profiles of the survey respondents.

4.2. Survey results

When comparing the data on the actual state and future development, both B2B and B2C respondents clearly agree that almost all digital marketing capabilities will become more instrumental in the future (see Table 4). With regard to their currently most important digital capabilities for their marketing activities, both B2B and B2C managers selected their *own company website* and *multichannel capability* most often (Table 5). Additional channel-related capabilities that were prominent include the use of *third-party e-commerce for selling* and providing a *mobile app for customers*. Regarding social media, the B2B managers named *social media for organizational communication*, taking

advantage of *positive customer reviews* and reacting appropriately on *negative customer reviews*, salespersons' *social media competency*, and engaging in *digital business communities*. The importance of digital relationships is highlighted by the identification of *social and digital CRM technologies*, *digital selling tools*, and *implementing digital change* as important capabilities. The importance of *advanced data analytics* relates to digital technologies.

Moreover, when we compare the current development and future importance of digital marketing capabilities, we encounter meaningful gaps in many capabilities. Many industrial marketers are being challenged by a deluge of data that is well beyond the capacity of their firms to comprehend and use, as pointed out by the gaps regarding *big data infrastructure for machine generated data* and *unstructured data*, *big data visualization*, *artificial intelligence and machine learning*, and *advanced data analytics* (Table 6). Moreover, the survey revealed *multichannel capability* gaps, also in terms of providing a *mobile app for customers*, *digital selling tools*, and *IoT technology*. In addition, B2B firms have a capability gap when it comes to *taking advantage of positive customer reviews*.

We also found some meaningful differences between the B2B vs. B2C perspective on digital marketing capabilities. Capabilities related to mobile apps, the management of customer reviews, and digital selling tools are much more developed in B2C firms, and B2B firms should learn from more advanced firms and adapt the obtained insights to the industrial context. The same applies to big data-related insights, such as machine generated data, cloud computing, and scraping and web crawling. On the contrary, B2B firms seemed to be more advanced than B2C firms in capabilities related to social media for salespersons and social CRM technologies.

Finally, we also encountered some newly generated digital marketing capabilities in the survey.³ Some of the B2B participants indicated that they miss digital marketing capabilities on our list that are important to them. First, several additional communication channels were mentioned. For instance, *e-mail marketing* and *newsletter marketing* were highlighted as important communication channels to build and nurture customer relationships. Other participants indicated the increasing importance of *instant messaging* such as WhatsApp, Viber, and Telegram for professional relationships. Nonetheless, in order to orchestrate multiple communication channels, several participants

³ These newly generated digital marketing capabilities were coded by the author team from answers to the question whether any important digital marketing capabilities or technologies were missing in the list.

Table 5
Current development and future importance of digital marketing capabilities.

	Current development		Future importance			Capabilities gap			
	B2B	B2C	Diff.	B2B	B2C	Diff.	Δ_{B2B}	Δ_{B2C}	Δ_{DIFF}
Channels									
Own company website	5.55	5.39	0.16	6.26	5.83	0.43	0.71	0.44	0.27
Use of third party e-commerce for purchasing	3.10	3.58	−0.48	3.74	3.94	−0.20	0.64	0.36	0.28
Use of third party e-commerce for selling	3.27	3.68	−0.41	4.43	5.02	−0.59	1.16	1.34	−0.18
Use of two-sided platforms for purchasing	2.01	2.12	−0.11	2.66	2.90	−0.24	0.65	0.78	−0.13
Use of two-sided platforms for selling	1.98	2.10	−0.12	3.05	3.59	−0.54	1.07	1.49	−0.42
Use of company-sponsored blogs	3.40	3.89	−0.49	4.72	4.75	−0.03	1.32	0.86	0.46
Multichannel capability	3.48	3.42	0.06	5.33	5.31	0.02	1.85	1.89	−0.04
Use of mobile sales assistants	2.62	2.87	−0.24	4.41	4.87	−0.46	1.79	2.00	−0.21
Providing a mobile app for customers	2.87	4.00	−1.13	4.75	5.24	−0.49	1.88	1.24	0.64
Social media									
Social media for organizational communication	4.81	5.00	−0.19	5.29	5.16	0.13	0.48	0.16	0.32
Social media for salespersons	3.40	2.95	0.45	4.94	4.57	0.37	1.54	1.62	−0.08
Social CRM technologies	3.95	3.57	0.38	5.37	5.31	0.06	1.42	1.74	−0.32
Own social media community	3.31	3.54	−0.23	4.77	4.80	−0.03	1.46	1.26	0.20
Reacting appropriately on negative customer reviews	4.16	4.89	−0.73	5.90	6.10	−0.20	1.74	1.21	0.53
Taking advantage of positive customer reviews	3.78	4.19	−0.41	5.93	5.73	0.20	2.15	1.54	0.61
Digital relationships									
Digital supply chain coordination	3.15	3.20	−0.05	4.56	4.55	0.01	1.41	1.35	0.06
Digital CRM technologies	4.16	4.07	0.10	5.39	5.45	−0.06	1.23	1.38	−0.15
Engaging in digital business communities	3.50	3.30	0.20	4.92	4.34	0.58	1.42	1.04	0.38
Video conferencing usage	4.63	4.51	0.13	5.52	4.36	1.16	0.89	−0.15	1.04
Implementing digital change	4.30	4.37	−0.07	5.98	5.84	0.14	1.68	1.47	0.21
Salesperson social media competency	3.36	3.39	−0.04	5.13	4.66	0.47	1.77	1.27	0.50
Digital technologies									
Advanced data analytics	3.36	3.67	−0.31	5.17	5.33	−0.16	1.81	1.66	0.15
Artificial intelligence and machine learning	2.52	2.71	−0.19	4.61	4.49	0.12	2.09	1.78	0.31
Big data infrastructure for structured data	3.17	3.48	−0.30	4.92	5.18	−0.26	1.75	1.70	0.05
Big data infrastructure for unstructured data	2.32	2.44	−0.11	4.41	4.57	−0.16	2.09	2.13	−0.04
Big data infrastructure for machine generated data	2.10	2.66	−0.57	4.29	4.54	−0.25	2.19	1.88	0.31
Big data visualization	2.63	3.00	−0.37	4.60	4.87	−0.27	1.97	1.87	0.10
Block chain technology	1.90	1.84	0.05	3.36	3.35	0.01	1.46	1.51	−0.05
Cloud computing	3.42	3.83	−0.41	5.18	5.08	0.10	1.76	1.25	0.51
Digital selling tools	3.50	4.13	−0.62	5.37	5.35	0.02	1.87	1.22	0.65
Internet of things technology	2.40	2.56	−0.16	4.42	4.16	0.26	2.02	1.60	0.42
Machine-to-machine communication	2.48	2.55	−0.07	4.22	3.94	0.28	1.74	1.39	0.35
Monitoring of social media data	3.47	3.97	−0.50	5.10	5.37	−0.27	1.63	1.40	0.23
Scraping and web crawling	2.28	2.90	−0.62	3.84	4.60	−0.76	1.56	1.70	−0.14
Virtual reality tools	2.13	2.45	−0.32	3.91	4.00	−0.09	1.78	1.55	0.23
Voice interfaces	2.44	2.40	0.04	4.09	4.02	0.07	1.65	1.62	0.03
Overall	3.19	3.41	−0.22	4.74	4.75	−0.01	1.55	1.34	0.21

Note: N_{B2B} = 106 managers, N_{B2C} = 63 managers. Current development and future importance are measured on 7-point scales. For means and Δ , the Top 10 are in bold and the Bottom 10 are in italics. Differences between B2B and B2C above 0.5 are highlighted.

Table 6
The digital marketing capabilities gap.

Capabilities Gap for B2B Firms			Δ	Capabilities Gap for B2C Firms			Δ
1.	Big data infrastructure for machine generated data (DT)	2.19		1.	Big data infrastructure for unstructured data	2.13	
2.	Taking advantage of positive customer reviews	2.15		2.	Use of mobile sales assistants	2.00	
3.	Artificial intelligence and machine learning (DT)	2.09		3.	Multichannel capability	1.89	
4.	Big data infrastructure for unstructured data (DT)	2.08		4.	Big data infrastructure for machine generated data	1.88	
5.	Internet of things technology (DT)	2.01		5.	Big data visualization	1.87	
6.	Big data visualization (DT)	1.98		6.	Artificial intelligence and machine learning	1.78	
7.	Providing a mobile app for customers	1.88		7.	Social CRM technologies	1.74	
8.	Digital selling tools (DT)	1.86		8.	Big data infrastructure for structured data	1.70	
				8.	Scraping and web crawling	1.70	
9.	Multichannel capability	1.85		9.	Advanced data analytics	1.66	
10.	Advanced data analytics (DT)	1.81		10.	Social media for salespersons	1.62	
				10.	Voice interfaces	1.62	

Note: N_{B2B} = 106 managers, N_{B2C} = 63 managers. Gaps are calculated by subtracting the current development from the future importance. The Top 10 digital marketing capabilities gap are reported.

pointed out that industrial firms need to better understand how to take advantage of *marketing automation platforms*. Second, the role of *search engines* and *online advertisement* in an industrial context has been highlighted, including topics such as search engine optimization, search

engine advertisement, open ad auctions, programmatic advertisement, retargeting, and pay per click optimization. Third, some participants already experiment with *paid social media* and in particular *influencer marketing* in a B2B context, without a clear understanding whether and

Table 7
Agenda for future research.

Themes (Gaps)	Topics and Research Questions for Exploration
Channels ($\Delta_{B2B} = 1.23$)	<ul style="list-style-type: none"> ■ How can industrial firms optimize the sales funnel in a multichannel environment? ■ Given the increasing use of <i>mobile and social media</i>, how can industrial firms integrate these new channels into their existing channel structure? ■ How do <i>search engine optimization</i> and <i>search engine advertisement</i> contribute to customer conversion and loyalty in an industrial context? ■ How can <i>marketing automation platforms</i> orchestrate multiple communication channels and different campaigns for industrial firms? ■ How can <i>corporate blogging</i> generate value for industrial firms? ■ To what extent can <i>instant messaging</i> such as WhatsApp, Viber, and Telegram be used for building and developing communications and rapport?
Social Media ($\Delta_{B2B} = 1.47$)	<ul style="list-style-type: none"> ■ What are the <i>microfoundations of social media use</i> that enable industrial firms to engage in successful social media conversations? ■ Which <i>content management strategies</i> should salespeople follow in their use of social media for customer relationships (in particular on LinkedIn)? ■ Does social media use of industrial firms <i>contribute to organizational performance</i>? If so, what are the magnitude and contingencies of the performance effect? ■ How can firms take advantage of <i>positive customer reviews</i> and react appropriately on <i>negative customer reviews</i> in an industrial context? ■ Do <i>paid social media</i> and <i>influencer marketing</i> work for industrial firms? ■ What are the <i>contingent influences</i> on the social media adoption by salespeople and customer loyalty?
Digital relationships ($\Delta_{B2B} = 1.40$)	<ul style="list-style-type: none"> ■ For which tasks can digital marketing capabilities be developed in industrial firms so as to <i>reduce the reliance on personal interaction</i>? ■ What are the <i>sources of resistance</i> to developing digital capabilities at the individual employee level? ■ What are the appropriate <i>digital metrics</i> for gauging the extent and quality of capabilities underlying digital relationships along the industrial sales funnel? ■ What are the ‘new’ <i>internal boundaries, interfaces, and interdependencies</i> of the marketing organization with other functional areas in industrial firms in determining decision rights over digital marketing practices? ■ What <i>form of digital relationships</i> emerge from <i>Internet-of-Things</i> technologies? How do these interactions manifest themselves in terms of the capability ecosystem supporting this form of digital relationship?
Digital technologies ($\Delta_{B2B} = 1.82$)	<ul style="list-style-type: none"> ■ Similar to consumer markets, can <i>online product configurators</i> be used for industrial products to replace costly customization processes? ■ How can industrial firms integrate <i>intelligent sales technologies</i> into the sales channel to nurture relationships and create a substantial advantage? ■ Given a higher willingness to do business via digital technology, how does the <i>high-tech vs. high-touch debate</i> from the service context affect the industrial context? ■ In particular, can <i>chatbots</i> enhance professional relationships? ■ How can industrial marketers capture, organize, comprehend, and use complex <i>big data</i> from multiple sources? ■ In the light of successful examples in consumer markets, how can industrial firms generate value with <i>Internet-of-Things</i> technologies? ■ How can industrial firms use <i>Virtual Reality</i> to enhance experiences and to shift existing business models into new competitive spaces?

how these digital activities pay off. Fourth, it was pointed out that *online product configurators* are important for B2C but so far overlooked for B2B firms although they could be used for similar purposes. Finally, *chatbots* offer the potential to make online conversations more efficient but are according to some participants not yet used for professional relationships.

5. Discussion and future research agenda

We contribute to the understanding of how digital marketing has evolved and will further mature in industrial marketing practices by using the resource-based perspective to identify different digital marketing capabilities, by reviewing 129 relevant articles investigating these capabilities over the past two decades, and by confronting 169 managers with the identified capabilities and the results of the literature review. We find seven categories of capabilities that can be grouped in four research themes: channels, social media, digital relationships, and digital technologies. In the light of several shortcomings of the current state of research that have limited its relevance and created points of disconnect between academia and practice, we build a future research agenda of emerging research topics related to digital capabilities in the industrial marketing field (see Table 7). Due to the evolution of the Internet and the shrinking cost of communication, there is a widening gap between the accelerating complexity of markets and the capacity of most marketing organizations to comprehend and cope with this complexity (Day, 2011). This gap is evident when we compare the current development and future importance of digital marketing capabilities within the four themes.

5.1. Channels

Similar to the current developments related to channels that is lower in B2B than B2C ($\Delta_{B2B \text{ vs. } B2C} = -0.31$), also research in industrial

marketing lags considerably behind the omnichannel developments in B2C research. While the online channel has been studied and the importance of multichannel strategies is recognized (e.g., Manser-Payne, Peltier, & Barger, 2017), a vast amount of research still departs from more traditional channel structures or concentrates on either the online channel in isolation (e.g., Gregory, Ngo, & Karavdic, 2019). For the online channel, optimization through tools such as SEO remains a challenge and a better understanding of how such tools and advertisement (still) plays a role continues to be important. While most B2B managers consider the firm's own website as instrumental in their marketing strategy, this is rudimentary and multichannel capabilities are also a top priority for the future (cf. Hossain, Akter, Kattiyapornpong, & Dwivedi, 2020).

What the value of each channel is in serving business clients, how to seamlessly integrate those channels in (existing) structures, and how to optimize conversion from one point to the next is far from clear from extant knowledge. Inspired by the developing literature dedicated to customer experience management in B2C (Kranzbühler, Kleijnen, Morgan, & Teerling, 2018), industrial marketers could benefit from developing more insights in what the value-in-use of various touchpoints (Maechler et al., 2017) is and what this entails for the optimization of the sales funnel. Specific topics of attention here are the use of mobile as well as the role of third parties. Mobile had long been integrated in the back office of many industrial firms, but the role of mobile applications in general and mobile as a sales assistant specifically is less well studied in B2B, despite its importance for practice (Archacki, Protextor, Barrios, & de Bellefonds, 2017).

In the light of channels and touch point analysis, it is important to consider the role of third parties in aiding and/or complimenting the customer journey. Emerging trends in service research and B2C marketing is stressing the importance of a network approach (Zolkiewski et al., 2017), where different parties that influence the customer in various stages of the journey should be explicitly considered, and the

discussion on owned versus earned touchpoints has yet to arise in industrial marketing. Third party-selling, while not a top priority, is a relevant theme in B2B and how to manage the implications of such partnership in a multichannel environment is an undeniable part of future B2B business.

5.2. Social media

Building on the role of channels and multichannel capabilities, social media capabilities warrant greater attention in their own right ($\Delta_{B2B \text{ vs. } B2C} = -0.12$). Overall, this was regarded as a theme with high future importance, but also where most development needs to take place demonstrating a significant digital marketing capabilities gap. Again, this is a field that has developed at remarkable pace in B2C (e.g., Herhausen, Ludwig, Grewal, Wulf, & Schoegel, 2019, 2020), and is only evolving in B2B (Bill, Feurer, & Klarmann, 2020). We might speculate that this is due to the fact that social media is often seen as a haven for consumers to interact with consumers and where consumer empowerment is considered superior to the role of the firm. Additionally, there is the traditional assumption that B2C is a high-volume customer market and B2B tends to deal with less customers and thus naturally geared towards more face-to-face interactions. That assumption however has been overhauled by the reality of contemporary industrial markets and customer expectations.

There are several social media initiatives that focus specifically on B2B and business opportunities (e.g., LinkedIn, Google Plus, and Slideshare). However, research in this area has devoted little attention to how interactions on such platforms can systematically fertilize (new) business opportunities. While social media is often recognized as a lead generator (Bill et al., 2020), some work has also pointed out the value of social media for relationship management (Ogilvie et al., 2018). Equally, others have proclaimed it as the new way of (net)working (Katona & Sarvary, 2014). Also, it is not clear yet what the micro-foundations of social media use are that enable industrial firms to engage in successful social media conversations. Social media often carries connotations of being “personal” and the need to be authentic, which has led to some backlash for companies that have taken strategic direction towards their employees and their social media interactions, with customers or otherwise (Mehmet & Clarke, 2016). Hence it remains unclear, what the role of the firm should be in developing social media strategies, how employees can be engaged in the right types of social media interactions, and how these translate to employee and firm performance. Early research seems to indicate that social media had value for industrial marketing, but how value creation and appropriation via these platforms emerges and which contingencies play a role in this is an important avenue for further research.

Corporate blogging was recognized as an emerging opportunity. While B2C practice as well as research on blogging, vlogging and influencer marketing has steadily developed into a mature field (e.g., Hughes, Swaminathan, & Brooks, 2019), B2B marketers struggle with how to develop corporate blogging into a strategically relevant tool. As it is difficult to draw upon analogies from the B2C world, where just about any consumer can become a b/vlogger, research in this field can make a substantial contribution in exploring the mechanisms of how corporate blogging can become an influential communication strategy in industrial marketing.

Specifically in relation to social media, the question arises how industrial firms can capitalize on the “voice of the customer”. From the start, social media has developed a strong stand in the reviewing sphere. In B2C, consumers consider social media as an important source of information and reviews, both positive and negative, are highly influential in the decision-making process (Rosario, Sotgiu, de Valck, & Bijmolt, 2016). Industrial marketers have yet to appreciate and embrace how this dimension of social media can be used effectively in B2B. Given that the decision making process in B2B is often substantially different from that of the individual consumer, it is important

to understand which factors would drive the impact of such review platforms in industrial marketing and to what extent firms can strategically influence these factors in order to capitalize on the review phenomenon in social media. Recent compelling insights by Bill et al. (2020) have found no fundamental support for the B2B salesperson social media use-customer loyalty relationship which challenges social media's role as a ‘game-changer’ (Kumar, 2015) and a ‘revolution in sales’ (Marshall et al., 2012). However, there are important contingencies to this relationship Bill et al. (2020) identify, whereby customer status and the size of the buying center exhibit significant positive relationship in enhancing loyalty. Consequently, social media adoption is not a panacea. Rather we need to examine the adoption practices and behaviors that trigger intermediate customer outcomes such as loyalty, lifetime value, and brand equity while recognizing that several contingencies potentially magnify these differential effects.

5.3. Digital relationships

Given the developments in the previous two themes, the theme of both inter- and intra-firm digital relationships emerges naturally as a point of interest. Relationship marketing has strong roots in industrial marketing (as indicated by $\Delta_{B2B \text{ vs. } B2C} = 0.05$). However, personal relationships are often equated with face-to-face interactions in B2B. Such a narrow understanding neglects that employees may also play a pivotal role of in digital interactions. For example, Herhausen, Emrich, Grewal, Kipfelsberger, and Schoegel (2020) provide evidence of the positive effects of employees' digital presence on customer loyalty, and Singh, Marinova, and Singh (2020) shed light on salespersons' influence tactics in digital negotiations. Moreover, there is the belief that the salesperson's tacit knowledge is pivotal to successful relationship management. In fact, attempts to transform to (digital) technologies to capture such tacit knowledge and manage relationships using a more data-driven approach often meets resistance from employees as they feel threatened by such transformational changes. Moving forward however, digital relationships are important in developing and sustaining a successful business, especially for those firms operating on an international or even global level. In fact, as the scope of the firm increases, personal and customized interactions and solutions can be achieved in many different ways (e.g., online product configurators), especially when digital CRM capabilities are developed in the right way. Online product configurators allow organizational buyers to select from product variants and construct a customized product solution manner. Building these capabilities at scale enables firms to provide mass customization to products that are high complex. An example of this is Zeppelin's configurator that provides B2B customers of Caterpillar construction machinery the platform upon which to design configure to specific performance requirements.

Cloud computing infrastructure provides B2B operatives on-demand network access to a pool of configurable resources. Commonly considered the responsibility of the Chief Digital Officer, decision rights over these and other new digital capabilities are becoming increasingly blurred. Whilst digital transformations is becoming seamless and core, important questions over the decision rights remain—who owns what, which processes, and what rules apply to understand the evolution of digital transformation. For example, Péladeau and Acker (2019) assert that: “Previously, Chief Digital Officer roles tended to be filled by people from market-facing functions, including marketing, customer services, sales, or distribution. Now, however, organizations are increasingly seeking Chief Digital Officer s with strategy and technology backgrounds—those who are able to work at the C-level across functional silos and who are capable of understanding the disruptions enabled by technology”.

The same applies to better understanding how different digital marketing capabilities across the B2B firm's portfolio, both complement and/or substitute across these ‘new’ internal boundaries, interfaces, and interdependencies of the marketing organization with other functional

areas in industrial firms. This question can be taken further by asking for which relational tasks can digital marketing capabilities be developed in industrial firms so as to reduce the reliance on personal interaction? Yadav and Pavlou (2020) pose a similar question for B2C contexts in order to better understand how relationships can alter within technology-enabled interactions. In setting management interventions then to develop such capabilities in B2B firms, it is important to understand clearly what are the sources of resistance to developing these at the individual employee level?

5.4. Digital technologies

Underlying all themes is the development of digital technologies as an essential resource feeding into digital capabilities, which is more in B2C settings ($\Delta_{B2B \text{ vs. } B2C} = -0.30$). To fuel marketing automation (e.g., website and search optimization, CRM), it is important to understand how integrating intelligent sales technologies into the sales channel can nurture relationships and create a substantial advantage for industrial firms. The qualities of those technologies substantially impact customer satisfaction and loyalty (Kingshott et al., 2020), hence it is important to understand both the characteristics of the technology that will make it successful as well as those that will drive employees' optimal use of it. Even though not fully accepted yet, there are signs that the need for personal contact is changing also in B2B (i.e., more willingness to do business via digital technology; Tan & Ludwig, 2016). Future research might transfer the high-tech vs. high-touch debate from the service context to an industrial context (Wirtz & Zeithaml, 2018). Interestingly, while technology interfaces have typically been regarded as less personal and less rich, arising technologies such as VR might actually shift this discussion to a more experiential focus, also in industrial marketing as these technologies are offering vivid and multi-sensory experiences (Boyd & Koles, 2019).

What is important to pay attention to in this digital transformation is the role of the employee and the negative consequences that such networks tend to be “always on” (i.e., 24/7 availability; Marshall et al., 2012). Especially in competitive environments, employees' wellbeing might be at serious risk here, especially when at the same time digital transformation can be perceived as a threat to the employees' job (i.e., being replaced by technology). More and more attention is being devoted to this issue, especially in light of the upcoming IoT and AI technologies and their potential to transform business models altogether (Huang & Rust, 2018). Along with these technology developments, it is important to understand the interplay of management skills such as innovation skills, leadership skills, management skills (Sousa & Rocha, 2019) to successfully translate these developments internally and externally.

Given the complexity of industrial markets, the potential of AI and IoT might be even larger than for B2C. Such technologies can deal with far more complex problems than humans can, so the potential to shift boundaries and create new paradigms is substantial. However, this also implies that there are new risks to account for, “as loci of control are likely to shift” (Sousa & Rocha, 2019), not just to customers but also to systems and technologies itself, as they start to interact independently. Consequently, future research directions emerge that call for specific industrial context.

5.5. Limitations

Our literature review is necessarily ‘retrospective’, restricted to existing research topics, and subject to the limitations inherent in the original studies. Only few of the articles deal with performance outcomes of digital marketing capabilities. For instance, many studies investigated the relationship between digital marketing capabilities and related constructs from a nomological network (e.g., social media use influences better collection of market intelligence online) but we know very little whether these digital marketing capabilities provide a

positive return to investment (because building these capabilities can be costly) or whether they increase sales or another financial outcome. In addition, most articles do not consider contingency effects in the outcomes of digital marketing capabilities. Whereas “mainstream” capability research is already saturated with a contingency approach (Morgan et al., 2019), we hardly found any papers on digital capabilities in an industrial marketing context. Such important nuances should be addressed by future research. Our subsequent interviews and the survey were designed to gain insight into the current development and future importance of digital marketing capabilities among practitioners, none of which allows us to measure actual usage or outcomes. More fine-grained empirical studies could determine the relative performance effects of different digital marketing capabilities for industrial firms, and a larger sample could examine industry-specific differences in the importance of the digital marketing capabilities.

6. Conclusion

Taken together, the literature review, the management interviews, and the survey revealed two marketing capabilities gaps: the *practice gap*—which identifies the deficit between managers' ‘current’ practices and their ‘ideal’ digital marketing capabilities; and, the *knowledge gap*—which demonstrates a significant divide between the digital marketing transformations in industrial firms and the extant scholarly knowledge that underpins this. We strongly believe that the current COVID-19 crisis further increases the opportunities and importance of digital marketing capabilities for B2B firms (e.g., Pedersen, Ritter, & Di Benedetto, 2020). Many governments implemented social distancing at large scales to limit spreading of the virus, and digital sales channels took priority during the COVID-19 crisis. Given that by the time we write this article there is no sign that personal meetings will be the norm again, B2B firms and B2B scholars need to close the digital marketing capabilities gap as fast as possible. We hope that our research agenda provide guidance for this endeavor.

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